HP StorageWorks
Enterprise File Services
WAN Accelerator Bypass NIC

installation guide

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Introduction

In This Introduction

Welcome to the *HP StorageWorks Enterprise File Services WAN Accelerator Bypass NIC Installation Guide.* Read this introduction for an overview of the information provided in this guide and for an understanding of the documentation conventions used throughout. This introduction contains the following sections:

- "About This Guide," next
- "Hardware and Software Dependencies" on page 4
- "Additional Resources" on page 4
- "Electrostatic Discharge Guidelines" on page 5
- "Contacting HP" on page 6

About This Guide

The *HP StorageWorks Enterprise File Services WAN Accelerator Bypass NIC Installation Guide* describes how to install the HP EFS N4c WAN Accelerator 4-port NIC, HP EFS N2c WAN Accelerator 2-port NIC, and HP EFS N2f WAN Accelerator 2-port NIC in the HP EFS WAN Accelerator.

Organization of This Guide

This guide includes the following chapters:

- Chapter 1, "Installing the Bypass NICs," describes how to install the HP EFS N4c WAN Accelerator 4-port NIC, HP EFS N2c WAN Accelerator 2-port NIC, and HP EFS N2f WAN Accelerator 2-port NIC.
- The Index directs you to areas of particular interest.

Document Conventions

This manual uses the following standard set of typographical conventions to introduce new terms, illustrate screen displays, describe command syntax, and so forth.

Convention	Meaning
italics	Within text, new terms and emphasized words appear in italic typeface.
boldface	Within text, commands, keywords, identifiers (names of classes, objects, constants, events, functions, program variables), environment variables, filenames, Graphical User Interface (GUI) controls, and other similar terms appear in bold typeface.
`Courier`	Information displayed on your terminal screen and information that you are instructed to enter appear in Courier font.
KEYSTROKE	Keys that you are to press appear in uppercase letters in Helvetica font.

Hardware and Software Dependencies

The HP EFS N4c WAN Accelerator 4-port NIC, HP EFS N2c WAN Accelerator 2-port NIC, and HP EFS N2f WAN Accelerator 2-port NIC are all compatible with HP EFS WAN Accelerators and require software version 2.1.5 or higher.

Additional Resources

This section describes the following resources that supplement the information in this guide:

- Related HP Documentation
- Online Documentation

Related HP Documentation

You can access the complete document set for the HP EFS WAN Accelerator from the *HP EFS WAN Accelerator Documentation Set CD-ROM*:

- *HP StorageWorks Enterprise File Services WAN Accelerator Installation and Configuration Guide* describes how to install and configure the HP EFS WAN Accelerator.
- *HP StorageWorks Enterprise File Services WAN Accelerator Management Console User Guide* describes how to manage and administer an HP EFS WAN Accelerator using the Management Console.
- *HP StorageWorks Enterprise File Services WAN Accelerator Command-Line Interface Reference Manual* is a reference manual for the HP EFS WAN Accelerator command-line interface. It lists commands, syntax, parameters, and example usage.

- *HP StorageWorks Enterprise File Services WAN Accelerator Deployment Guide* describes how to deploy the HP EFS WAN Accelerator in complex network environments (for example, environments using Web Cache Communication Protocol (WCCP), Policy Based Routing (PBR), and Layer-4 switches).
- *HP StorageWorks Enterprise File Services Remote Copy Utility Reference Manual* describes how to install and deploy the HP EFS Remote Copy Utility (HP EFS RCU). The HP EFS RCU is an optional utility of the HP EFS WAN Accelerator that copies, mirrors, and transparently prepopulates data.
- *HP StorageWorks Enterprise File Services WAN Accelerator Manager User Guide* describes how to install, configure, and administer a network made up of multiple HP EFS WAN Accelerators using the HP EFS WAN Accelerator Manager.

Online Documentation

The HP EFS WAN Accelerator documentation set is periodically updated with new information. To access the most current version of the HP EFS WAN Accelerator documentation and other technical information, consult the HP technical support site located at **http://www.hp.com/support/manuals**.

Electrostatic Discharge Guidelines

Follow these Electrostatic Discharge (ESD) guidelines to ensure that your equipment is not damaged from improper handling:

- When you install or perform maintenance tasks, you must wear a properly grounded ESD wrist or ankle strap to protect the system hardware against electrostatic discharge. Make sure that the strap makes skin contact prior to handling the HP EFS WAN Accelerator or bypass NICs.
- If an ESD strap is not available, touch a properly grounded metallic surface prior to handling the equipment.
- Periodically check the resistance value of the antistatic strap to ensure it is functioning properly.
- If you remove or replace a bypass NIC, you must transport the unit in a conductive container or an ESD bag that has been grounded or neutralized.
- Store the bypass NIC in its protective packaging until you are ready to install it.
- Do not touch the electronic components on the bypass NICs.

Contacting HP

This section describes how to contact HP.

Technical Support

Telephone numbers for worldwide technical support are listed on the following HP web site: http://www.hp.com/support. From this web site, select the country of origin. For example, the North American technical support number is 800-633-3600.

NOTE: For continuous quality improvement, calls may be recorded or monitored.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

HP Storage Web Site

The HP web site has the latest information on this product, as well as the latest drivers. Access the storage site at: http://www.hp.com/country/us/eng/prodserv/storage.html. From this web site, select the appropriate product or solution.

HP NAS Services Web Site

The HP NAS Services site allows you to choose from convenient HP Care Pack Services packages or implement a custom support solution delivered by HP ProLiant Storage Server specialists and/or our certified service partners. For more information see us at http://www.hp.com/hps/storage/ns_nas.html.

CHAPTER 1

Installing the Bypass NICs

In This Chapter

This chapter describes how to install the HP EFS N4c WAN Accelerator 4-port NIC, HP EFS N2c WAN Accelerator 2-port NIC, and HP EFS N2f WAN Accelerator 2-port NIC in the HP EFS WAN Accelerator. This chapter includes the following sections:

- "Before You Begin," next
- "Installing the bypass NICs in an HP ProLiant DL320-510, DL320-1010, DL320-2010, DL320-520, DL320-1020, or DL320-2020" on page 10
- "Installing the bypass NICs in an HP ProLiant DL380-3010 or DL380-5010" on page 10

This chapter assumes you have installed and configured the HP EFS WAN Accelerator. For detailed information, see the *HP StorageWorks Enterprise File Services WAN Accelerator Installation and Configuration Guide* and the *HP StorageWorks Enterprise File Services WAN Accelerator Management Console User Guide*.

IMPORTANT: When installing a Bypass NIC into the DL380-3010 or DL380-5010, use the lowest empty PCI-X slot available. The slots are numbered from the lowest physical slot (slot 1) to the highest physical slot (slot 3). Please refer to the *HP ProLiant DL380 Generation 4 Server Maintenance and Service Guide* for an illustration and description of the PCI-X slots.

Before You Begin

The following section describes important information you need to know before you begin the installation process. It contains the following sections:

- "HP EFS N4c WAN Accelerator 4-port NIC Status Lights," next
- "HP EFS N2c WAN Accelerator 2-port NIC Status Lights" on page 9
- "HP EFS N2f WAN Accelerator 2-port NIC Status Lights" on page 9
- "Required Tools and Equipment" on page 10

The HP EFS WAN Accelerator is equipped with a bypass card to prevent a single point of failure. If there is a serious problem with the HP EFS WAN Accelerator, it goes into bypass mode and the traffic is passed through unoptimized. You can install multiple-port bypass cards to connect to multiple routers and switches.

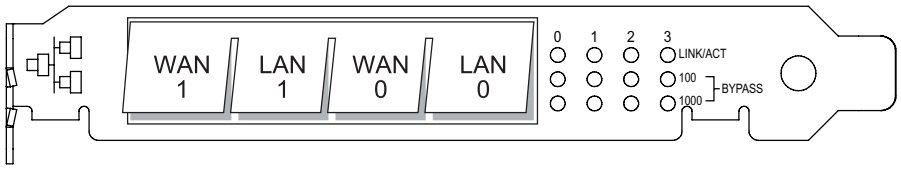
The HP EFS N4c WAN Accelerator 4-port NIC, HP EFS N2c WAN Accelerator 2-port NIC, and HP EFS N2f WAN Accelerator 2-port NIC are supported by HP EFS WAN Accelerator, version 2.1.5 (or higher) software.

NOTE: There are hardware limitations on how many cards are supported.

The HP EFS N4c WAN Accelerator 4-port NIC, HP EFS N2c WAN Accelerator 2-port NIC, and HP EFS N2f WAN Accelerator 2-port NIC enable you to connect to multiple routers and switches connecting your Local Area Network (LAN) and Wide Area Network (WAN). With these bypass NICs, you can use the same data store in the HP EFS WAN Accelerator across multiple links in your network.

HP EFS N4c WAN Accelerator 4-port NIC Status Lights

Figure 1-1. HP EFS N4c WAN Accelerator 4-port NIC



The four columns of lights on the HP EFS N4c WAN Accelerator 4-port NIC represent the following interfaces:

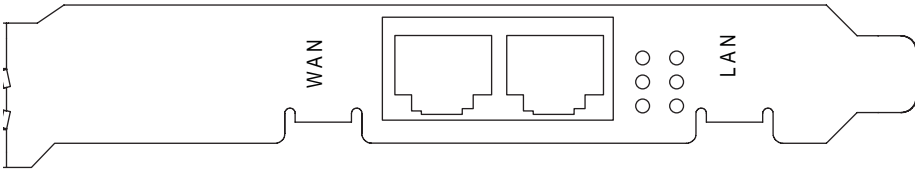
- Column 0 — WAN 1
- Column 1 — LAN 1
- Column 2 — WAN 0
- Column 3 — LAN 0

The status lights for each column are explained below:

Light	Description
Link/Act (Link and Activity)	Solid green indicates a physical Ethernet link is established. Flashing green indicates data transfer is occuring.
100	Solid green indicates the link is connected at 100 Mbps speed.
1000	Solid green indicates the link is connected at 1000 Mbps speed.
100 and 1000—Bypass	When both lights are solid green, it indicates the card is in bypass mode.

HP EFS N2c WAN Accelerator 2-port NIC Status Lights

Figure 1-2. HP EFS N2c WAN Accelerator 2-port NIC

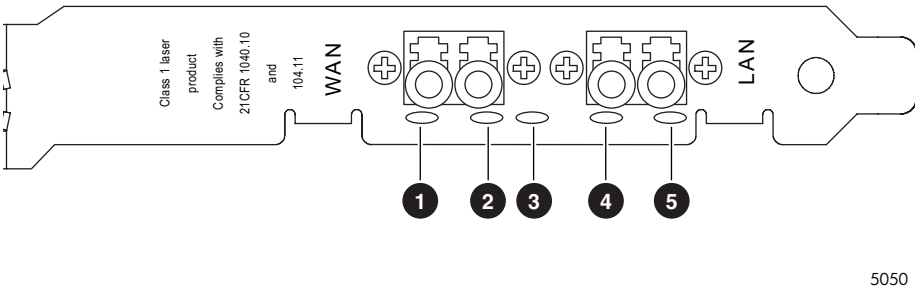


The following table describes the HP EFS N2c WAN Accelerator 2-port NIC Light-Emitting Diode (LED) lights. The left column of LED lights corresponds to the left port and the right column of LED lights corresponds to the right port.

Status	Top LED (Green)	Middle LED (Green)	Bottom LED (Green)
Network Link Not Established	Off	Off	Off
Network Link Established	On	n/a	n/a
Network Link Active	Flashing	n/a	n/a
100 Mbps (100 Base T) Link	On	On	Off
1000 Mbps (1000 Base T) Link	On	Off	On
Bypass Mode	Off	On	On

HP EFS N2f WAN Accelerator 2-port NIC Status Lights

Figure 1-3. HP EFS N2f WAN Accelerator 2-port NIC



The status lights for the HP EFS N2f WAN Accelerator 2-port NIC Card are explained below:

Item	Light	Description
1	WAN link	Solid yellow indicates WAN link is established.
2	WAN activity	Flashing green indicates data transfer is occurring.
3	Bypass light	Solid green indicates card is in bypass mode.
4	LAN link	Solid yellow indicates LAN link is established.
5	LAN activity	Flashing green indicates data transfer is occurring.

Required Tools and Equipment

You will need the following tools and equipment to install the bypass NICs:

- A T-15/T-10 Torx screwdriver
- Straight-through cables to connect the LAN ports to the LAN switches
- Crossover cables to connect the WAN ports to the WAN routers

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IMPORTANT: Ensure that you follow proper Electrostatic Discharge (ESD) procedures when you handle the bypass NICs or HP EFS WAN Accelerator. See "Electrostatic Discharge Guidelines" on page 5 for procedures.

Installing the bypass NICs in an HP ProLiant DL320-510, DL320-1010, DL320-2010, DL320-520, DL320-1020, or DL320-2020

See the *HP ProLiant DL320 Generation 4 Server Maintenance and Service Guide* procedures for PCI Riser Board Assembly and Expansion Board removal and replacement.

Installing the bypass NICs in an HP ProLiant DL380-3010 or DL380-5010

See the *HP ProLiant DL380 Generation 4 Server Maintenance and Service Guide* procedures for PCI Riser Cage and Expansion Board removal and replacement.

IMPORTANT: When installing a Bypass NIC into the DL380-3010 or DL380-5010, use the lowest empty PCI-X slot available. The slots are numbered from the lowest physical slot (slot 1) to the highest physical slot (slot 3). Please refer to the *HP ProLiant DL380 Generation 4 Server Maintenance and Service Guide* for an illustration and description of the PCI-X slots.

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